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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,527	07/17/2000	AKIKO ITAI	P19291	1282

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EXAMINER

KIM, YOUNG J

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 03/11/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/508,527

Applicant(s)

ITAI, AKIKO

Examiner

Young J. Kim

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

This Office Action responds the Amendment received on January 3, 2003 (Paper No. 16).

#### ***Preliminary Remark***

The cancellation of claims 2 and 12, canceled without prejudice or disclaimer, is acknowledged.

Claims 1, 3-11, and 13-20 are pending therefore.

#### ***Information Disclosure Statement***

The IDS received on January 3, 2003 is acknowledged (Paper No. 17). The Eisenberg et al. reference (U.S. Patent No. 5,436,850) have been crossed out in the corresponding PTO 1449 because the reference had already been cited in the previous Office Action.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The rejection of claims 11 and 13-20 under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter, made in the Office Action mailed on July 3, 2002, is maintained for the reasons of record.

Applicants' arguments received on January 3, 2003 have been fully considered, but they are not found persuasive.

Applicants argue that the database claims (claims 11, 13-20), "extends the functionality of a computer by allowing the method of claim 1 to be performed." (page 4, Amendment).

This argument is not persuasive because the database does not in fact "extend" the functionality of a computer. Although the method claims require a database, such database is not determined to extend the functionality of the computer for the following reasons.

The MPEP is clear that a music CD is a non-statutory subject matter because claiming non-functional descriptive material on a computer-readable media (CD) does not make the CD itself a statutory subject matter (MPEP 2016(b)). While a computer program on a computer readable media which creates a graphical user interface to be able to play the music from a CD, certainly extends the computer's functionality, *i.e.*, play music CDs, the music CDs themselves are not statutory because the data themselves thereon do not extend the computers functionality in any way (non-functional descriptive material). The CD is simply read by the CD player program. In the same way, while the method claims are statutory because it extends the computer's functionality, *i.e.*, allow the computer to predict a protein scaffold, the database claims are not statutory because the database merely contain data (non-functional descriptive material) which are read in the method claims. Just as a music CD does not extend the computer's functionality, the database, in like manner, would not extend the computer's functionality.

If Applicants' arguments were valid, then any music CD would also be patentable because the music CDs would be used in a computer implemented method of playing a music CD (*i.e.*, CD music player program).

Applicants also argue that the claimed database contains sequence information, including the side chain environmental data, allowing for the method of claim 1 to work more efficiently

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and accurately than previous methods of predicting the three dimensional structure of the query protein (page 4, Amendment).

This argument is also not found persuasive for the following reasons.

Applicants seem to argue that the database contains data which affect in which the method claims work. This is, however, not the case. The method requires a certain set of data and the database just contains those data. In other words, the database itself does not actively affect the method itself, but rather the method requires certain types of data to which the database is designed to contain. A music CD player program could also read information from a music CD, such as the artist information, track information such as a song length (in minutes) and total length of CD (in minutes). In other words, the CD contains a set of data which is required by the CD player program. In view of the above analogous relationship, the database is determined to be non-statutory.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of claims 1, 3, 4-11, 13-20 under 35 U.S.C. 102(b) as being anticipated by Eisenberg et al. (U.S. Patent No. 5,436,850, July 25, 1995), made in the Office Action mailed on July 3, 2002, is maintained for the reasons of record.

Applicants' arguments received on January 3, 2003 have been fully considered but they are not found persuasive for the reasons below.

The thrust of the Applicants' argument is that the claimed invention uses *at least* two partial sequences in matching query protein to a reference protein sequence for overcoming the problem of gaps which reduces the reliability of the predicted structure when comparing sequences of low homology (page 5, Amendment).

Although the phrase, "at least two partial sequences" never appears in the claims, the phrase is assumed to be referring to "two or more segment sequences" in claim 1.

The above argument is not found persuasive because the method claims do not actively require the at least two partial sequences (or segments) be compared to the query protein. The claims do require that the query protein and the "environmental information" of the reference protein be compared. The environmental information of the reference protein is in fact compared against the query protein in Eisenberg et al. reference (column 4, lines 25-45; column 6, lines 43-65; column 10, lines 45-65), wherein the environment of a side-chain is classified as buried, partially buried, or exposed as well as the degree of their polarity is used when predicting the protein structure.

Additionally, the "two or more segments" to which the Applicants refer to is defined by the claim 3, defined as hydrophobic core, or one or more sub segment sequences which are not predetermined to form a hydrophobic core. In other words, the claims require the two or more segments of the reference protein for establishing the environmental information, such as hydrophobic core, or other sub segments, but the segment themselves are not explicitly required for their comparison against the query protein. Eisenberg et al. reference also discloses the segmentation of the reference proteins into buried, partially buried, or exposed segments (or

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hydrophobicity) (column 4, lines 25-45; column 6, lines 43-65; column 10, lines 45-65), clearly anticipating the invention as claimed.

Eisenberg et al. also discloses that all sequences in a database of target sequences are aligned with the 3D structure profile using a dynamic programming algorithm which allows "insertion and deletions in the alignment," allowing the compensation of gaps for more accurate prediction.

Therefore, Applicants' arguments are not found persuasive and the invention as claimed is determined to be anticipated by the cited reference.

#### ***Conclusion***

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

#### ***Inquiries***

**Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Young J. Kim whose telephone number is (703) 308-9348.**

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The Examiner can normally be reached from 8:30 a.m. to 7:00 p.m. Monday through Thursday. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Benzion, can be reached at (703) 308-1119. Papers related to this application may be submitted to Art Unit 1637 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. The Fax number is (703) 746-3172. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Young J. Kim

3/6/03

  
KENNETH R. HORLICK, PH.D  
PRIMARY EXAMINER

3/10/03